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EXAMINER	
ELALLAM, AHMED	
ART UNIT	**PAPER NUMBER**
2662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/539,795	Applicant(s) GROW ET AL.	
	Examiner AHMED ELALLAM	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to Amendment filed on 11/24/2004

Claims 1-3, 5-33 are pending. All the pending claims are rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5-8, 11-19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charny et al (USP 6,072,772, hereafter Charny) in view of Cloonan et al (USP 5,724,32, hereafter Cloonan).

- Referring to claims 1 and 12, Charny discloses a switching fabric for transmitting data frames to destinations, each data frame having a destination, the switching fabric comprising: a plurality of input ports for partitioning portions of received data frames to provide data cells (col. 6, lns. 18-25); and a crossbar switch (plurality of crossbar sections), the crossbar switch (each of the crossbar sections) being coupled to each of the input ports for receiving the data cells at cell transfer intervals on a data link coupled between each of the input ports and the crossbar switch (each of the crossbar sections (Fig. 1), the crossbar switch (each of the crossbar sections) being coupled to transmit the data cells to any one of a plurality of output ports, wherein each of the input

ports includes logic for scheduling the transmission of each data cell of each said data frame received at each of the input ports during a cell transfer interval for each data link coupled between each of the input ports (col. 6, lns. 65-col. 7, lns. 25) and the crossbar switch (each of the crossbar sections) based upon an (ability) availability of the path through the crossbar switch (each of the crossbar sections) to receive the data cells of the data frames with a destination associated with each of the output ports (col. 7, lns. 1-25). Charny does not expressly disclose a crossbar switch with multiple crossbar sections. Cloonan discloses a system that has multiple crossbar sections called pipes. The inputs to the pipes connect each of the input interfaces with each of the output ports. The switch has a controller that finds an available pipe through the switch fabric to the appropriate output port (Fig. 2-4, coll. 7, lns. 5-25, col. 7, lns. 50-60, col. 8, lns. 1-9). The system of Charny could be modified to include a crossbar switch that is broken up into multiple crossbar sections. The controller would be responsible to distribute the traffic across the different pipes in the switch. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with a switch fabric that is divided into different crossbar sections. One of ordinary skill in the art would have been motivated to do this since as the size of the crossbar switch grows, it becomes highly impractical to make an NxN switch when the size of N exceeds 32 (col. 7, lns. 5-15, Cloonan). Further, a skilled person would recognize the need to implement the availability of the pipes of Cloonan by each scheduler of Charny in transmitting the cells to their destination so to increase the switching capability of Charny/Cloonan switching apparatus.

- Referring to claims 2 and 13, Charny and Cloonan disclose the switching fabric of claims 1 and 12, wherein each of the input ports maintains a plurality of data frame queues of received data frames, each of the data frame queues corresponding with one of the output ports and having logic for enqueuing data frames specifying a destination associated with the output port (col. 6, lns. 54-65).

- Referring to claim 3, Charny discloses the switching fabric of claim 2, wherein each said data frames includes a data payload and each of the input ports provides for each said data frame, one or more associated data cells including a portion of the data payload, the one or more associated data cells collectively having the data payload of each of the data frames, wherein each of the input ports schedules a transmission of each said data cell to one of the crossbar sections on the data link coupled between each of the input ports and each of the crossbar sections (col. 6, lns. 10-35, col. 6, lns. 65-col. 7, lns. 25).

- Referring to claim 5, Charny and Cloonan disclose the switching fabric of claim 3, wherein for each data link coupled between each of the input ports and each of the crossbar sections, each of the input ports attempts to schedule a data cell of a partially transmitted data frame, the partially transmitted data frame having at least one associated data cell previously scheduled for transmission to a crossbar section, prior to scheduling a transmission of a data cell of a data frame for which no data cells have been previously scheduled for transmission to a the crossbar section (the cells are given timestamps, so the fragmented cells would be transmitted before newly arriving cells, col.7, lns. 25-35).

- Referring to claim 6, Charny and Cloonan disclose the switching fabric of claim 1, wherein each crossbar section maintains a plurality of data cell queues for data cells received on the data links coupling each crossbar section to each of the input ports, each data cell queues corresponding with an output port, each data cells in each data cell queues being of a partition of a data frame specifying a destination associated with the output port (col. 7, lns. 25-33).

- Referring to claim 7, Charny and Cloonan disclose the switching fabric of claim 6, wherein each data cell queue of a the crossbar section is capable of enqueuing a finite number of data cells at any one time, and wherein the ability of the crossbar section to receive the data cells of the data frames with a destination associated with the output port is based upon a quantity of locations in each data cell queue, each location capable of receiving a single data cell from an input port (col. 7, lns. 55-65).

- Referring to claim 8, Charny and Cloonan disclose the switching fabric of claim 1, the switching fabric further including a plurality of output ports, each output port having logic for reassembling data frames having a destination associated with the each said output port from data cells received from each of the crossbar sections coupled to the each said output port (vol. 6, lns. 40-53).

- Referring to claim 11, Charny and Cloonan disclose the switching fabric of claim 1, wherein the switching fabric includes a plurality of output ports and for each output port, each of the crossbar section transmits a signal to each input ports indicating the ability of each crossbar sections to receive the data cells of the data frames specifying a destination associated with the output port (see claim 1, the controller monitors the

paths through the pipes, so the different sections communicate with the controller, which in turn communicates with the input ports to transmit data).

- Referring to claim 14, Charny and Cloonan disclose the method of claim 13, wherein each of the data frames includes a data payload, the method further comprising: providing for each data frame in a data frame queue at an input port one or more associated data cells including a portion of the data payload of the each said data frame, the one or more associated data cells with the data frame collectively having the data payload of each said data frame; and scheduling a transmission of the one or more associated data cells to the crossbar section on the data link. (col. 6, lns. 15-25).

- Referring to claim 15, Charny and Cloonan disclose the method of claim 14, the method further comprising scheduling a transmission of each the one or more associated data cells to the crossbar section on the data link coupled between the input port and the one of the crossbar sections prior to scheduling a transmission of a data cell of a subsequent data frame in the data frame queue to any of the crossbar sections (the cells have time stamps, col. 7, lns. 25-33).

- Referring to claim 16, Charny and Cloonan disclose the method of claim 15, the method further comprising, for each data link coupled between each input port and each crossbar section, attempting to schedule a transmission of a data cell of a partially transmitted data frame, the partially transmitted data frame having at least one associated data cell previously scheduled for transmission to a crossbar section prior to scheduling a transmission of a data cell of a data frame for which no data cells have

been previously scheduled for transmission to the crossbar section (the cells have time stamps that make sure cells input at an earlier time are output first (col. 7, lns. 25-35).

- Referring to claim 17, Charny and Cloonan disclose the method of claim 12, the method further comprising, at each crossbar section, maintaining a plurality of data cell queues of data cells received on the data links coupling each crossbar section to each input ports, each data cell queue corresponding with an output port, each data cell in each data cell queue being of a partition of a data frame specifying a destination associated with the output port (col. 6, lns. 15-25).

- Referring to claim 18, Charny and Cloonan disclose the method of claim 17, wherein each data cell queue of a crossbar section is capable of enqueuing a finite number of data cells at any one time, the method further including determining the ability of the crossbar section to receive the data cells of the data frames with a destination associated with as the output port based upon a quantity of locations in each of the data cell queue, each location capable of receiving a single data cell from an input port (col. 7, lns. 55-65).

- Referring to claim 19, Charny and Cloonan disclose the method of claim 12, the method further comprising: receiving the data cells at an output port from each of the crossbar sections coupled to the output ports; and at output port, reassembling data frames having a destination associated with the output port from data cells received from each crossbar section coupled to the output port (col. 6, lns. 45-55).

- Referring to claim 21, Charny and Cloonan disclose the method of claim 17, the method further comprising transmitting a signal from each output ports to each crossbar

section indicating an ability to receive data cells from data links coupling each output port to each crossbar section (col. 8, lns. 3-25).

- Referring to claim 22, Charny and Cloonan disclose the method of claim 12, the method further comprising transmitting a signal from each crossbar section to each input port indicating the ability of each crossbar section to receive the data cells of the received data frames specifying a destination associated with the output port (see claim 1, the controller monitors the paths through the pipes, so the different sections communicate with the controller, which in turn communicates with the input ports to transmit data).

2. Claims 9, 10, 20 and 23-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charny and Cloonan, and further in view of Momirov (USP 6,489,209 B1).

- Referring to claim 9, Charny and Cloonan disclose the switching fabric of claim 8, but does not expressly disclose wherein each said output port is coupled to one or more media access control (MAC) devices through a common transmission medium, and wherein for each MAC device coupled to said output port, said output port maintains an associated MAC queue of reassembled data frames for transmission to the said MAC device, the destination of each reassembled data frame in the associated MAC queue being associated with the MAC device. Momirov discloses a system that fragments packets that are connected to MAC devices. The packets are sent across a switch core. When packets are received, they are partitioned into fixed sized cells. The

input port has address resolution units (ARUs) that received the packets, and use a lookup table to insert routing information into the partitioned cell. The cell can then be transmitted across the switch core (col. 7, lns. 10-25, col. 8, lns. 28-col. 9, lns. 21). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with MAC devices and look-up tables to forward the partitioned cells across the switch core. One of ordinary skill in the art would have been motivated to do this since MAC devices typically send packets of varying lengths, breaking the packets into fixed length cells allows the data to be efficiently transmitted across the switch. Lookup tables are used to address the fragmented packets to ensure that they are properly reassembled at the output.

- Referring to claim 10, Charny discloses the switching fabric of claim 9, wherein each of the said output ports transmits a signal to each crossbar section indicating an ability to receive the data cells from data links coupling said output port to each crossbar section (the system has an arbiter that monitors the input and output ports, col. 7, lns. 25-35, the controller of Cloonan monitors the different pipes to determine a path across the switch fabric, see claim 1).

- Referring to claim 20, Charny discloses the method of claim 19, but does not expressly disclose the method further comprising, at the output port, maintaining a media access control (MAC) queue of reassembled data frames to be transmitted to one or more MAC devices through a common transmission medium, the destination of each reassembled data frame in the MAC queue being associated with the one or more MAC devices. Momirov discloses a system that fragments packets that are connected

to MAC devices. The packets are sent across a switch core. When packets are received, they are partitioned into fixed sized cells. The input port has address resolution units (ARUs) that received the packets, and use a lookup table to insert routing information into the partitioned cell. The cell can then be transmitted across the switch core. The cells are then reassembled after passing through the switch core (col. 7, lns. 10-25, col. 8, lns. 28-col. 9, lns. 21). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with MAC devices and look-up tables to forward the partitioned cells across the switch core. One of ordinary skill in the art would have been motivated to do this since MAC devices typically send packets of varying lengths, breaking the packets into fixed length cells allows the data to be efficiently transmitted across the switch. Lookup tables are used to address the fragmented packets to ensure that they are properly reassembled at the output.

3. Referring to claim 23 (items are italicized for clarity to indicate terminology inside the parenthesis), Charny discloses a switch fabric in a data communication network including a plurality of host computers for transmitting data packets to a plurality of destinations, (*each destination being associated with a media access control (MAC) device having a MAC address*), the switching fabric comprising: a plurality of output ports (Fig. 1), (*each of output port being coupled to at least an associated one of the MAC devices for transmitting MAC data frames to the MAC device according the MAC address associated therewith; a look-up engine for receiving the data packets from the*

host computers and forming intermediate data frames based upon the data packets), the (*intermediate*) data frames having information identifying an output port associated with one of the destinations the MAC device in a header and a data payload (col. 6, lns. 15-25); a plurality of input ports for receiving the (*intermediate*) data frames (*from the lookup engine*), each input port partitioning the data payload of at least some of the intermediate frames received at the input port to provide a plurality of data cells (Fig. 1, col. 6, lns. 15-25); and a crossbar switch (*plurality of crossbar sections*), the crossbar switch (*each crossbar section*) being coupled to each of the input ports for receiving the data cells at cell transfer intervals on a data link coupled between each of the input ports (Fig. 1, col. 7, lns. 55-65) and the crossbar section (*each crossbar section*), to the crossbar switch (*each crossbar sec*tion) being coupled to transmit the data cells to any one of the plurality of output ports (col. 6, lns. 65-col. 7, lns 25), wherein each input port includes logic for scheduling the transmission of each data cell of a received (*intermediate*) data frame to any output port, based upon an ability of the crossbar switch (*crossbar section*) to receive the destined for a given output port (col. 6, lns. 65-col. 7, lns.25).

Charny does not expressly disclose a crossbar switch with multiple crossbar sections. Cloonan discloses a system that has multiple crossbar sections called pipes. The inputs to the pipes connect each of the input interfaces with each of the output ports. The switch has a controller that finds an available pipe through the switch fabric to the appropriate output port (Fig. 2-4, coll. 7, lns. 5-25, col. 7, lns. 50-60, col. 8, lns. 1-9). The system of Charny could be modified to include a crossbar switch that is broken

up into multiple crossbar sections. The controller would be responsible to distribute the traffic across the different pipes in the switch. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with a switch fabric that is divided into different crossbar sections. One of ordinary skill in the art would have been motivated to do this since as the size of the crossbar switch grows, it becomes highly impractical to make an NxN switch when the size of N exceeds 32 (col. 7, lns. 5-15, Cloonan). Further, a skilled person would recognize the need to implement the availability of the pipes of Cloonan by each scheduler of Charny in transmitting the cells to their destination so to increase the switching capability of Charny/Cloonan switching apparatus.

Charny does not expressly disclose that the output ports are coupled to MAC devices with MAC addresses, where a lookup engine forms intermediate frames specifying an output port associated with a destination. Momirov discloses a system where MAC devices are attached to a switch core. When packets are received, they are partitioned into fixed sized cells. The input port has address resolution units (ARUs) that received the packets, and use a lookup table to insert routing information into the partitioned cell. The cell can then be transmitted across the switch core (col. 7, lns. 10-25, col. 8, lns. 28-col. 9, lns. 21). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with MAC devices and look-up tables to forward the partitioned cells across the switch core. One of ordinary skill in the art would have been motivated to do this since MAC devices

typically send packets of varying lengths, breaking the packets into fixed length cells allows the data to be efficiently transmitted across the switch. Lookup tables are used to address the fragmented packets to ensure that they are properly reassembled at the output.

- Referring to claim 24, Charny/Cloonan discloses the switch fabric of claim 23, wherein each of the input port maintains a plurality of data frame queues for received intermediate data frames, each data frame queue corresponding with an output port and enqueuing intermediate data frames specifying a destination associated with the output port (col. 6, lns. 54-65).

- Referring to claim 25, Charny/Cloonan discloses the switch fabric of claim 24, wherein each received intermediate data frames includes a data payload and each input port provides for each data frame one or more associated data cells including a portion of the data payload, the one or more associated data cells with the data frame collectively having the data payload of the intermediate data frame, wherein the scheduler of each input port schedules a transmission of each of the one or more associated data cells to the crossbar section on the data link coupled between each of the input ports and the crossbar section (col. 6, lns. 15-25).

- Referring to claim 26, Charny/Cloonan discloses the switch fabric of claim 25, wherein each of the input ports scheduler schedules a transmission of one or more associated data cells to one of the crossbar section on the data link coupled between each input port and each crossbar section prior to scheduling a transmission of a data cell of a subsequent data frame in the data frame queue to any of the crossbar sections

(the cells have time stamps to make sure cells are transmitted in an appropriate order, col. 7, lns. 25-35).

- Referring to claim 27, Charny/Cloonan discloses the switch fabric of claim 25, wherein for each data link coupled between each input port and each crossbar section, each input port attempts to schedule a data cell of a partially transmitted data frame, the partially transmitted data frame having at least one associated data cell previously scheduled for transmission to a crossbar section prior to scheduling a transmission of a data cell of a data frame for which no data cells have been previously scheduled for transmission to the crossbar section (the cells have time stamps to make sure cells are transmitted in an appropriate order, col. 7, lns. 25-35).

- Referring to claim 28, Charny/Cloonan discloses the switch fabric of claim 23, wherein each crossbar section maintains a plurality of data cell queues of the data cells received on the data links coupling each crossbar section to each input port, each of the data cell queue corresponding with an output port, each data cell in each data cell queue being of a partition of a data frame specifying a destination associated with the output port (col. 7, lns. 25-35).

- Referring to claim 29, Charny/Cloonan discloses the switch fabric of claim 28, wherein each data cell queue of the crossbar section is capable of enqueuing a finite number of data cells at any one time, and wherein the ability of each crossbar section to receive the data cells of the data frames with a destination associated with as the output port is based upon a quantity of locations in each data cell queue, each location capable of receiving a single data cell from an input port (col. 7, lns. 55-65).

- Referring to claim 30, Charny/Cloonan discloses the switch fabric of claim 23, wherein each output port includes logic for reassembling the data frames specifying a destination associated with each output port from data cells received from each crossbar section coupled to each of the output ports (col. 6, lns. 45-55).

- Referring to claim 31, Charny/Cloonan discloses the switch fabric of claim 30, wherein each output port is coupled to each MAC device associated with each of the output ports through a common transmission medium and wherein each output port maintains a MAC queue of reassembled data frames for transmission to the associated MAC devices, the destination of each reassembled data frame in the MAC queue being associated with the MAC device (see claim 23, col. 8, lns. 3-15).

- Referring to claim 32, Charny/Cloonan discloses the switch fabric of claim 31, wherein each output port transmits a signal to crossbar section indicating an ability to receive the data cells from data links coupling each of the output ports to the each crossbar section (col. 8, lns. 3-40).

- Referring to claim 33, Charny/Cloonan discloses the switch fabric of claim 23, wherein for each output port, each of the crossbar section transmit a signal to each input port indicating the ability of each crossbar section to receive the data cells of the data frames specifying a destination associated with each output port (see claim 23, the pipes have a controller that monitors the different pipes and their ability to receive data associated with an output port).

Response to Arguments

4. Applicant's arguments filed July 21, 2004 have been fully considered but they are not persuasive.

Applicants argue that a prima facie rejection of obviousness under 35 USC § *103(a)* has not been established. Examiner respectfully disagrees.

Claim 1:

Applicants argue that a prima facie case of obviousness under *35 USC § 103(*a) has not been established, especially the limitation of claim 1:

each input port including logic for scheduling the transmission of each data cell...to any output port based upon an ability of a crossbar section to receive the data cells destined for a given output port.

Applicant further stated "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)"

Examiner, respectfully disagrees that is the case, and notes: *"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).*

Charny (US Patent (6,072,772)) discloses substantially all the limitation of claim 1 as indicated above, except that the crossbar switch having multiple crossbar sections.

However, Cloonan discloses a system that has multiple crossbar sections called pipes. The switch has a controller that finds an available pipe through the switch fabric to the appropriate output port (Fig. 2-4, coll. 7, lns. 5-25, col. 7, lns. 50-60, col. 8, lns. 1-9). The system of Charny could be modified to include a crossbar switch that is broken up into multiple crossbar sections. The controller would be responsible to distribute the traffic across the different pipes in the switch. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Charny, with a switch fabric that is divided into different crossbar sections. One of ordinary skill in the art would have been motivated to do this since as the size of the crossbar switch grows, it becomes highly impractical to make an NxN switch when the size of N exceeds 32 (col. 7, lns. 5-15, Cloonan). Further, a skilled person would recognize the need to implement the availability of the pipes of Cloonan by each scheduler of Charny in transmitting the cells to their destination so to increase the switching capability of Charny/Cloonan switching apparatus.

The motivation in the instant case is clearly stated, in addition, other motivations are implicitly present in the teaching of Charny, for example a skilled artisan would recognize the benefit of implementing sub-section as taught by Cloonan in lieu of the crossbar unit to have the benefit of distributed processing over the centralized processing of Charny. The advantage of distributed processing is well known, it increase the processing time, scalability and reliability. This is general knowledge, and may similarly be motivating in combining the Cloonan and Charny references.

Examiner believes that the reference teaching (Charny/ or Cloonan) *would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).*

Examiner had stated in the previous office action:

Charny discloses that the crossbar unit 24 of figure 1 can route data cells from any input to any output, the crossbar having schedulers at each input port (see rejection of claim 1 above). Cloonan discloses a crossbar switch with multiple crossbar sections. A person of skill in the art would be motivated to implement the Crossbar switch of Cloonan having multiple pipes (sections) in lieu of the crossbar switch of Charny, since the size of the crossbar switch grows, it becomes highly impractical to make an NxN switch when the size of N exceeds 32 (col. 7, lns. 5-15, Cloonan), and since each crossbar section can route data from any input to any output port (see Cloonan, figure 10), it would be more practical to have the schedulers at Charny/Cloonan input ports schedule the transfer of data cells based on the availability of the crossbar section. Such feature would have been naturally suggested by the implementation of the Cloonan's crossbar in lieu of that of the Charny, because it would be more desirable to have a non-blocking switch structure than a blocking one. Stated differently, it would make no sense to have multiple crossbar sections in Charny/Cloonan' switch structure if they cannot t be used upon their availability.

In contrast to Applicant allegation non-obviousness, Examiner notes that: Obviousness can only be established by combining or modifying the teachings of the

prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Applicant traversed Examiner Argument, stating that no motivation exist to modify the combined references to place the non-blocking logic at the input port. (page 3, 3rd Paragraph). Examiner respectfully disagrees. First that wasn't the stated motivation by the Examiner, second, a person of skill in the art would recognize any modification necessary in combining the Piping structure of Cloonan in lieu of Charny's Crossbar, the modifications would require for example a new set of software/or logic to cope with the necessary modification in Charny/Cloonan structure.

Examiner believes, given the argument above and in contrast to Applicants belief, that the suggestion, motivations are within the scope of an ordinary person of skill in the art.

On page 4, Applicant argue that even if the references are combinable, they would still fail to teach or suggest *"each input port including logic for scheduling the transmission of each data cell... to any output port based upon the ability of a crossbar section to receive the data cell destined for a given output port."* (Emphasis added).

Examiner disagrees, as previously stated, *each crossbar section can route data from any input to any output port (see Cloonan, figure 10), it would be more practical to have the schedulers at Charny/Cloonan input ports schedule the transfer of data cells based on the availability of the crossbar section. Such feature would have been naturally suggested by the implementation of the Cloonan's crossbar in lieu of that of the Charny, because it would be more desirable to have a non-blocking switch structure than a blocking one, by taking advantage of the inherent "distributed processing" of the multi-section crossbar switch of Cloonan.*

Examiner believes, given the above statement, that a prima facie case of obviousness is well established. Therefore, claims 1, 3, 5-8, 11-19, 21 and 22 are unpatentable over Charny in view of Cloonan, and for the same reasons claims 9, 10, 20 and 23-33 are unpatentable in view of Cloonan, Charny and Momirov.

Examiner believes, given the broadest reasonable of claim limitations, the rejection above is proper.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
Monday, March 18, 2005

JOHN PEZZLO
PRIMARY EXAMINER